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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,708	11/24/2003	Madjid F. Nakhjiri	CE09292R	5371

22917 7590 06/15/2005

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EXAMINER

SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,708

Applicant(s)

NAKHJIRI ET AL.

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-21,23-27 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,22 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-21,23-27 and 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Per Applicant's Request for Continued Examination:
Applicant has amended claims 1, 4, 7-13, 15, 17, 20, 23-25, 27 and 29.
Claims 2, 3, 22 and 28 are cancelled.
Claims 1, 4-21, 23-27 and 29-32 are pending.

Response to Arguments

1. Applicant's arguments with respect to claims 1, 8-10, 17-19, 27 and 29 and have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **1, 4-7 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Barna et al* (US 2002/0046277) in view of *Verma et al* (US 2003/0224792).

- a. **Per claim 1**, *Barna et al* teach a method for point-to-point protocol (PPP) link handoff comprising: communicating, by a source access router (AR), with a remote unit via a PPP communication link, wherein PPP context information is associated with the PPP communication link; determining that a PPP link handoff from the source AR to a target AR should occur; and conveying the PPP context information to the target AR; and conveying traffic

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information via a tunnel between the source AR and the target AR (paragraphs 0015-0016, 0027 and 0034-0037).

Yet, *Barna et al* fail to explicitly teach wherein conveying the PPP context information comprises conveying only types of PPP context information that are applicable to the target AR. However, *Verma et al* disclose conveying information specific to the PPP context information that would be applicable to the target router at the tunnel endpoint, in handoff, such information as the tunnel ID, call state data for the connection, sequencing numbers of the packets, address for the tunnel endpoint and call state data relating to the PPP protocol—all of which are applicable to the endpoint router (paragraphs 0043 and 0045-0052).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Barna et al* and *Verma et al* for the purpose of conveying information that is applicable to the target router for communicating only the information essential to the target router and necessary for establishing a successful tunnel connection and handoff.

b. **Claim 27** contains limitations that are substantially equivalent to claim 1 and is therefore rejected under the same basis.

c. **Per claim 4**, *Barna et al* teach the method of claim 1, further comprising: determining when the tunnel between the source AR and the target AR will expire based on a tunnel lifetime; and extending the lifetime of the tunnel in order to convey the PPP context information (paragraphs 0015-0016 and 0034 and 0036).

d. **Per claim 5**, *Barna et al* teach the method of claim 1, wherein conveying the PPP context information comprises conveying the PPP context information when a period of low remote unit data activity begins (paragraphs 0035-0036).

e. **Per claim 6**, *Barna et al* teach the method of claim 1, wherein PPP context information comprises timer information used for PPP operation (paragraphs 0008 and 0035-0036).

f. **Per claim 7**, *Barna et al* and *Verma et al* teach the method of claim 1, *Verma et al* further teach the method of claim 1, wherein conveying the PPP context information and conveying the traffic information occur concurrently (paragraphs 0043 and 0045-0052).

4. Claims **11-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Barna et al* (US 2002/0046277) in view of Applicant Admitted Prior Art (*AAPA*).

a. **Per claim 11**, *Barna et al* teach the method of claim 1 as applied above, yet *Barna et al* fail to explicitly teach of sending parameters. *AAPA* teaches sending parameters selected from the group consisting of SYNC-MAP, PROTOCOL_FIELDCOMPRESSION, ADDRESS FIELD COMPRESSION, MRU, Magic number, Van Jacobson Header Compression, AUTH TYPE, the target AR Internet Protocol (IP) Address, Mobile IP (MIP) Flag, PPP in-activity timer, and PPP session timer (page 3, lines 10-20). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of PPP link handoff of *Barna et al* by sending parameters selected from the group consisting of SYNC-MAP, PROTOCOL_FIELDCOMPRESSION, ADDRESS FIELD COMPRESSION, MRU, Magic number, Van Jacobson Header Compression, AUTH TYPE, the

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target AR Internet Protocol (IP) Address, Mobile IP (MIP) Flag, PPP in-activity timer, and PPP session timer because the above options are negotiated to establish a new PPP link between a mobile user and a new PDSN and therefore sending these parameters to the new PDSN eliminates some or all of the negotiation process and thus reduce setup time and bandwidth that must be allocated to exchange negotiation messages.

b. **Per claim 12**, *Barna et al* teach the method of claim 1 as applied above, yet *Barna et al* fail to explicitly teach sending only link control parameters and network control parameters. *AAPA* teaches sending only link control parameters and network control parameters (page 2, lines 5-9 and page 3, lines 21-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of PPP link handoff of *Barna et al* by sending only link control parameters and network control parameters because the above options are negotiated to establish a new PPP link between a mobile user and a new PDSN and therefore sending these parameters to the new PDSN eliminates some or all of the negotiation process and thus reduce setup time and bandwidth that must be allocated to exchange negotiation messages.

c. **Per claim 13**, *Barna et al* teach the method of claim 1 as applied above, yet *Barna et al* fail to explicitly teach sending only link control parameters and authentication parameters. *AAPA* teaches sending only link control parameters and authentication parameters (page 2, lines 5-19). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of PPP link handoff of *Barna et al* by sending only link control parameters and authentication parameters because the above options are negotiated to establish a new PPP link between a mobile user and a new PDSN and therefore

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sending these parameters to the new PDSN eliminates some or all of the negotiation process and thus reduce setup time and bandwidth that must be allocated to exchange negotiation messages.

d. **Per claim 15**, *Barna et al* teach the method of claim 1 as applied above, yet *Barna et al* does not teach sending link control parameters, authentication parameters, and network control parameters. *AAPA* teaches sending link control parameters, authentication parameters, and network control parameters (page 2, lines 5-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of PPP link handoff of *Barna et al* by sending link control parameters, authentication parameters, and network control parameters because the above options are negotiated to establish a new PPP link between a mobile user and a new PDSN and therefore sending these parameters to the new PDSN eliminates some or all of the negotiation process and thus reduce setup time and bandwidth that must be allocated to exchange negotiation messages.

e. **Per claim 14**, *Barna et al* teach the method of claim 13, wherein a header compression scheme supported by the target AR is not known by the source AR to match a header compression scheme used by the source AR for the PPP communication link (paragraphs 0034-0037).

f. **Per claim 16**, *Barna et al* teach the method of claim 15, wherein a header compression scheme supported by the target AR is known by the source AR to match a header compression scheme used by the source AR for the PPP communication link (paragraphs 0034-0037).

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5. Claims 8-10, 17, 20, 21, 23-26, 29, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Barna et al* (US 2002/0046277) in view of *Krishnamurthi et al* (US 2003/0174667).

a. **Per claim 17**, *Barna et al* teach a method for point-to-point protocol (PPP) link handoff comprising: receiving, by a target access router (AR), PPP context information from a source AR; establishing, by the target AR, a PPP link between the target AR and a remote unit using the PPP context information and receiving traffic information via a tunnel between the source AR and the target AR (paragraphs 0015-0016 and 0034-0037).

Yet, *Barna et al* fail to explicitly teach sending, by the target AR, capabilities of the target AR to the source AR. However, *Krishnamurthi et al* disclose prior to handoff, nearby AR sending to the source AR their capabilities information, in order for the source AR to determine with nearby AR satisfies certain criteria according to its capabilities (Abstract and paragraphs 0006-0009 and 0019-0024).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Barna et al* and *Krishnamurthi et al* for the purpose of the source AR receiving data referring to the capabilities of the target AR, in order to determine the characteristics of the AR prior to handoff. This would in turn provide an indication as to the ability of the target AR to handle the handover and channel processes.

b. **Claims 8, 9, 10 and 29** contains limitations that are substantially equivalent to claim 17 and is therefore rejected under the same basis.

c. **Claim 20** is substantially similar to claim 7 and is therefore rejected under the same basis.

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d. **Claim 21** is substantially similar to claim 5 and is therefore rejected under the same basis.

e. **Claims 23 and 24** are substantially similar to claim 4 and are therefore rejected under the same basis.

f. **Per claim 25**, *Barna et al* and *Krishnamurthi et al* teach the method of claim 17, *Barna et al* further teach the method further comprising: establishing a network layer link between the target AR and the remote unit using the PPP link (paragraphs 0015-0016 and 0034-0036).

g. **Per claim 26**, *Barna et al* teach the method of claim 25 further comprising: tearing down the tunnel between the source AR and target AR after establishing the network, layer link (paragraph 0037).

h. **Per claim 31**, *Barna et al* teach the target AR of claim 29, wherein the target AR comprises a packet data serving node (PDSN) (paragraph 0027).

i. **Per claim 32**, *Barna et al* teach the target AR of claim 29, wherein the target AR comprises a GPRS gateway support node (GGSN) (paragraph 0027).

6. **Claims 18, 19 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Barna et al* (US 2002/0046277) and *Krishnamurthi et al* (US 2003/0174667) in view of *Lioy et al* (USPN 6,377,556).

a. **Per claim 18**, *Barna et al* and *Krishnamurthi et al* teach the method of claim 17 as indicated above, yet fail to explicitly teach the method of claim 17, further comprising negotiating, by the target AR with the remote unit, PPP parameters not received by the target AR

from the source AR. However, *Lioy et al* disclose PPP configuration negotiation and renegotiation (col.4 line 66-col.6 line 39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Barna et al*, *Krishnamurthi et al* and *Lioy et al* for the purpose of the negotiating with the source AR to receive information needed to properly handle to the handoff and to successfully establish a channel for the handover.

b. **Per claim 19**, *Barna et al*, *Krishnamurthi et al* and *Lioy et al* teach the method of claim 18, *Lioy et al* further teach the method of claim 18, further comprising: determining that at least a portion of the PPP context information is not applicable to the target AR; and negotiating, by the target AR with the remote unit, PPP parameters corresponding to the PPP context information determined to not be applicable to the target AR (Abstract and col.4 line 66-col.6 line 65).

c. **Claim 30** is substantially similar to claim 18 and is therefore rejected under the same basis.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: *Findikli et al* (USPN 6,157,835), *Koodli et al* (US 2004/0092264), *Findikli et al* (USPN 6,044,271), *DeSantis et al* (USPN 6,728,540) and *Chaskar et al* (US 2004/0196808).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

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